



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI  
GOVERNOR

DAVID P. LITTELL  
COMMISSIONER

**Verso Bucksport LLC  
Hancock County  
Bucksport, Maine  
A-22-70-E-A**

**Departmental  
Findings of Fact and Order  
Part 70 Air Emission License  
Amendment #2**

After review of the license amendment application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A, Section §344 and Section §590, the Department finds the following facts:

**I. REGISTRATION**

**A. Introduction**

Facility	Verso Bucksport LLC (Verso Bucksport)
License Number	A-22-70-C-A
License Type	Part 70 Minor License Modification
NAICS Code	322121 (pulp mill that produces paper)
Nature of Business	Groundwood and Thermomechanical pulp, paper making
Facility Location	Main Street, Bucksport
Date of Initial License Issuance	December 30, 2004
Date of Amendment Issuance	February 10, 2010

Verso Bucksport is requesting the following changes to air emission license A-22-70-A-I:

- removing the roll grinding area operation license requirement for two wet scrubbers and a baghouse since they no longer vent to the atmosphere (condition 21);
- rewording the Boiler 8 electrostatic precipitator (ESP) requirement in condition 15(D) to address firing natural gas;
- documenting the approval previously given by the Department to use an alternative lb/MMBtu calculation when Boiler 8 is in warm standby mode and is not delivering steam to the system;
- clarifying Boiler 8 start-up includes cold start-up or warm standby where no usable steam is produced;
- using the alternative calculation for six hours from start-up or warm standby rather than four hours, and
- replacement of the existing weigh hopper baghouses.

These changes are included in the pending renewal application, but Verso has requested the changes be issued now and submitted a separate request in addition to the renewal application.

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B. Application Classification

The application for Verso does not violate any Applicable requirement or state requirement; does not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the license; does not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts or visibility or increment analysis; does not seek to establish or change a Part 70 license term or condition for which there is no corresponding underlying Applicable requirement, and that the source has assumed to avoid an Applicable requirement to which the source would otherwise be subject; is not a modification or reconstruction under Section 111 or 112 of the CAA (Clean Air Act), or a Title I Modification under the CAA; and is not required by the Department to be processed as a significant modification.

Therefore, the proposed changes are considered to be Part 70 Minor License Modifications and have been processed under *Part 70 Air Emission License Regulations* 06-096 CMR 140 (last amended on December 24, 2005).

**II. PART 70 MINOR MODIFICATION DESCRIPTIONS**

A. Roll Grinding Operations

Verso Bucksport has three roll grinding operations which previously vented to the atmosphere. Two were controlled with wet scrubbers and one was controlled with a baghouse. License requirements included opacity and particulate matter limits, and maintenance and recordkeeping for the control equipment.

Verso Bucksport has requested that the roll grinding operations condition (condition 21 in air emission license A-22-70-A-I) be removed from the license since the sources no longer vent to the atmosphere. The scrubbers now vent inside the building (all exterior vents have been capped off) and the baghouse exhaust has been moved inside.

The Department approves removing the roll grinding operations requirements in condition 21.

B. Boiler 8 Requirements for ESP Operations

Boiler 8 is an 814 MMBtu/hr multi-fuel boiler. Condition 15(D) in air emission license A-22-70-A-I states that the facility 'shall control particulate matter emissions from Boiler 8 with the operation and maintenance of a multiclone followed by an electrostatic precipitator.'

Verso Bucksport has requested to reword condition 15(D) to allow Boiler 8 to operate without the ESP when firing natural gas only. Opacity issues have arisen when firing natural gas only at low firing rates such as start-ups, shutdowns, and when firing one or two of the igniters to keep the boiler warm. The ESP control system allows operation of the ESP at a higher O<sub>2</sub> level than in the past, but when the O<sub>2</sub> gets near 20%, the power to the precipitator is reduced to minimize fire risk. Rapping or sparking at the very low power allows ash to flake off and exit the ESP which results in opacity. Excess opacity has been seen, recorded, and reported when there was no fire in the Boiler. The emissions are stopped by shutting the ESP down.

The Department shall reword condition 15(D) to allow the ESP to be off when firing natural gas only in Boiler 8. Natural gas is a clean fuel, particulate controls are not required on new gas fired boilers, and this scenario will reduce emissions when an ESP low power operation would otherwise allow ash flake-off emissions.

**C. Boiler 8 Calculation Corrections**

**1. Alternative lb/MMBtu Calculation**

Verso Bucksport has requested inclusion of license language documenting the Department's approval of an alternative method of calculating lb/MMBtu emissions rates from Boiler 8 when operating in warm standby mode firing natural gas without producing usable steam (the boiler pressure is less than or equal to the header pressure). The Department approved the calculation method via an email response to a letter submitted by Verso Bucksport on December 16, 2008.

Verso Bucksport proposed, and the Department concurred, the use of an alternative method of converting pollutant concentrations to units of the standards as allowed in 40 CFR Part 60, Section 60.13(i)(f). Verso Bucksport now uses the alternative method to convert NO<sub>x</sub> and SO<sub>2</sub> ppm to lb/MMBtu during the specific operating scenario of keeping Boiler 8 in a warm standby mode while firing natural gas at very low rates without delivering usable steam. The issue arose because the O<sub>2</sub> tends to be high in this operating mode which results in a high lb/MMBtu due to the conversion calculation even though the ppm is low. The current license language (condition 15(L) in air emission license A-22-70-A-I) allows for the use of a 14% O<sub>2</sub> cap to be used in conversions for the first four hours of a start-up, but doesn't address non-cold startup operations.

Verso Bucksport's need to have a standby unit occurs only occasionally when the facility is operating with the gas turbine alone. A back-up is needed in an

emergency, such as if the gas turbine trips. Verso Bucksport's alternative option to using Boiler 8 on standby would be to use Boiler 5 on standby, however the overall emissions from firing Boiler 5 would be much greater than firing Boiler 8 on gas igniters. There is regulatory precedence for using the 14% O<sub>2</sub> cap as it is allowed for boilers subject to 40 CFR Part 75 (see Appendix F Conversion Procedures Section 3.3.4.1).

This license amendment documents the allowance of the alternative calculation in condition 15(L).

## **2. Six Hour Calculation Correction**

Verso Bucksport has requested that the start-up conversion calculation for Boiler 8 in condition 15(L) be revised from four hours to six hours. The current license allows the use of a 14% O<sub>2</sub> cap to be used in calculations for the first four hours of startup when much higher O<sub>2</sub> levels skew the calculated values. The timeframe was previously chosen by the Department as a limit which also corresponded to the four hour start-up exemption for opacity in place at the time. However, Verso Bucksport now has a start-up opacity window of 6 hours.

Natural gas is used for startup of Boiler 8, but NO<sub>x</sub> limit problems occur after four hours because of the conversion from ppm to lb/MMBtu. The 0.2 lb/MMBtu NO<sub>x</sub> limit cannot be met when firing gas only due to the fact that the O<sub>2</sub> is still significantly higher than when on biomass or oil. The action taken by Verso Bucksport is to then put in oil to finish startup (with the higher NO<sub>x</sub> 0.3 lb/MMBtu oil limit). Putting oil in the boiler after not firing oil for an extended time causes opacity issues due to the cold oil, even though a portion of the line has a recirculation system. Therefore, to avoid calculated NO<sub>x</sub> limit problems on natural gas, Verso Bucksport fires oil which results in opacity issues. With a timeframe of six hours, the boiler can be heated and have the correct amount of steam pressure to go directly from natural gas to biomass, without the need to fire oil to correct for NO<sub>x</sub>.

This license amendment extends the alternative calculation for start-up in condition 15(L) to six hours.

## **D. Clarifying Boiler 8 Start-up**

Verso Bucksport has requested clarification of the license language in condition 15(M) for Boiler 8 opacity during start-up. Condition 15(M) states, in part, 'exceedances of the opacity limit during the first six hours following the initiation of startup or planned shutdown shall be exempt by the Department, provided that operating records are available to demonstrate that the facility was being operated

to minimize emissions.’ Verso Bucksport has requested clarification that start-up include both cold start-up and warm standby where no usable steam is being produced.

When the facility is in the warm standby mode (with gas igniters to keep the boiler warm without producing usable steam – the boiler pressure is less than or equal to header pressure) the alternative NO<sub>x</sub> lb/MMBtu calculation is used as discussed above. Verso Bucksport proposes that the start-up exemption should apply during the warm standby scenario and the license language should be clarified. In the condition of warm standby, the facility is not producing usable steam, the boiler is not up to temperature, the oil guns are not firing, and the oil in the system is colder than when firing the oil guns and pumping a large volume through the header. The alternative is to shut the boiler down for a few hours to truly be in a cold start-up as the term ‘start-up’ is currently interpreted without any clarification language. This operating scenario of shutting down completely and then starting up again when the boiler is even cooler is worse for the environment than allowing the warm standby mode to be considered part of the startup definition.

The Department shall clarify 15(M) to state that the opacity allowance includes start-up to be defined as either cold start-up or warm standby where no usable steam is being produced (boiler pressure is less than or equal to header pressure). In addition, there shall be no more than 10 (6) minute averages exceeded in the start-up period.

**E. Starch Weigh Hoppers 1 and 2 Baghouses**

Verso Bucksport operates baghouses on the starch weigh hoppers as required in condition 20 of air emission license A-22-70-I-A. The facility plans to replace the existing weigh hopper baghouses since the baghouses are now obsolete and replacement parts are scarce. Verso Bucksport submitted information on the proposed replacement units, including an expected capture efficiency of 99.99%.

The Department approves the replacement of the starch weigh hoppers 1 and 2 baghouses with newer, more efficient units. The new baghouses meet BPT per 06-096 CMR 100 and 115. The requirements of condition 20 shall remain the same as currently licensed; including operation and maintenance of the baghouses, opacity limits, and a recordkeeping log.

**F. Facility Emissions**

Emissions from Verso Bucksport shall be limited to the following (as calculated in license A-22-70-A-I):

**Total Licensed Annual Emission for the Facility**  
**Tons/year**  
(used to calculate the annual license fee)

<b><u>Equipment</u></b>	<b><u>PM</u></b>	<b><u>PM<sub>10</sub></u></b>	<b><u>SO<sub>2</sub></u></b>	<b><u>NO<sub>x</sub></u></b>	<b><u>CO</u></b>	<b><u>VOC*</u></b>
Boilers 5, 6, 7, 8, and the gas turbine	351	341	2800	1410	628	205
Off Machine Coater				29		
TMP Process Vents						28.5
Groundwood Process Vents						144.5
Diesel Emergency Generators (Onan 1, 2, and 3 total)	2.3	2.3	0.3	17.4	1.7	0.6
<b>TOTALS</b>	<b>353.3</b>	<b>353.3</b>	<b>2800.3</b>	<b>1456.4</b>	<b>629.7</b>	<b>378.6</b>

- \* Paper machine VOC are noted, but not included since they are highly variable and unquantified at this time. TMP and Groundwood VOC calculations are based on maximum capacity and the factors included in the finding of fact of fact in air emission license A-22-70-A-I, Section II (K).

**ORDER**

Based on the above Findings and subject to conditions listed below, the Department concludes that emissions from this source:

- will receive Best Practical Treatment;
- will not violate applicable emissions standards
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants the Part 70 License A-22-70-E-A pursuant to 06-096 CMR 140 and the pre-construction permitting requirements of 06-096 CMR 115; and subject air emission license A-22-70-A-I, A-22-70-B-T, A-22-70-C-A and the conditions below.

Federally enforceable conditions in this Part 70 license must be changed pursuant to the applicable requirements in 06-096 CMR 115 for making such changes and pursuant to the applicable requirements in 06-096 CMR 140.

Condition (21) in air emission license A-22-70-A-I shall be removed (re: roll grinding) and shall no longer be valid.

The following shall replace Condition 15(D) in air emission license A-22-70-A-I:

(15) **Boiler 8 (Multi-fuel boiler)**

D. Verso Bucksport shall control particulate matter emissions from Boiler 8 with the operation and maintenance of a multicyclone followed by an electrostatic precipitator (ESP). The ESP is not required to be operated when firing natural gas only in Boiler 8. [06-096 CMR 140, BPT]

The following shall replace Condition 15(L) in air emission license A-22-70-A-I:

(15) **Boiler 8 (Multi-fuel boiler)**

L. Calculation Corrections

1. For no more than six (6) hours during start-up, Verso Bucksport may make the following calculation corrections for Boiler 8:
  - a. Stack O<sub>2</sub> levels that exceed 14.0% may be replaced with a value of 14.0
  - b. Stack CO<sub>2</sub> levels less than 5.0% may be replaced with a value of 5.0
  - c. Hourly lb/MMBtu averages for SO<sub>2</sub>, NO<sub>x</sub>, and CO may be recalculated if the observed stack O<sub>2</sub> is greater than 14.0% and/or the observed stack CO<sub>2</sub> is less than 5.0% for no more than six (6) hours during start-up.
  - d. The recalculated hourly lb/MMBtu averages may be used for compliance purposes.
2. While operating in warm standby mode firing natural gas without producing usable steam (boiler pressure is less than or equal to header pressure), Verso Bucksport may make the following calculation corrections for Boiler 8:
  - a. Stack O<sub>2</sub> levels that exceed 14.0% may be replaced with a value of 14.0
  - b. Hourly lb/MMBtu averages for SO<sub>2</sub> and NO<sub>x</sub> may be recalculated if the observed stack O<sub>2</sub> is greater than 14.0% during warm standby mode firing natural gas without producing usable steam.
  - c. The recalculated hourly lb/MMBtu averages may be used for compliance purposes.

[06-096 CMR 140, BPT]

The following shall replace Condition 15(M) in air emission license A-22-70-A-I:

(15) **Boiler 8 (Multi-fuel boiler)**

M. For Boiler 8, exceedances of the opacity limit during the first six hours following the initiation of start-up from cold start-up, warm standby where no

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usable steam is being produced (boiler pressure is less than or equal to header pressure), or planned shutdown shall be exempt by the Department, provided that operating records are available to demonstrate that the facility was being operated to minimize emissions and, in the case of warm standby, to demonstrate that no usable steam was being produced. The total exemptions shall not be greater than 10 exceedences, based on 6 minute averages. Any person claiming an exemption shall have the burden of proving that any excess emissions were not caused entirely, or in part, by poor maintenance, careless operation, poor design or any other reasonably preventable condition. [06-096 CMR 140, BPT]

DONE AND DATED IN AUGUSTA, MAINE THIS *10th* DAY OF *February*, 2010.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *James P. Brooks Jr.*  
DAVID P. LITTELL, COMMISSIONER

The term of this license shall be concurrent with the term of air emission license A-22-70-A-I.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: July 7, 2009

Date of application acceptance: July 28, 2009

Date filed with the Board of Environmental Protection

This Order prepared by Kathleen E. Tarbuck, Bureau of Air Quality.

